

# SEQUENCE LISTING

<110> Birkett, Ashley J.

<120> IMMUNOGENIC Hbc CHIMER PARTICLES HAVING ENHANCED STABILITY

<130> 4564/91644 ICC-102.2 DV II

<140> NOT YET ASSIGNED

<141> 2004-3-19

<150> 09/930,915

<151> 2001-08-15

<150> PCT/US01/41759

<151> 2001-08-16

<150> 60/226,867

<151> 2000-08-22

<150> 60/225,843

<151> 2000-08-16

<160> 313

<170> PatentIn Ver. 2.1

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<212> PRT

<213> Plasmodium falciparum

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<212> PRT

<213> Plasmodium falciparum

<400> 2

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Ala	Ser	Val	Thr
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<212> PRT

<213> Streptococcus pneumoniae

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 Gln Gln Ala  
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<210> 5  
 <211> 27  
 <212> PRT  
 <213> Cryptosporidium parvum

<400> 5  
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 1 5 10 15  
 Pro Ala Ala Gln Gln Asp Lys Pro Ala Asp Ala  
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<210> 6  
 <211> 17  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 6  
 Arg Lys Arg Ile His Ile Gly Pro Gly Arg Ala Phe Tyr Ile Thr Lys  
 1 5 10 15  
 Asn

<210> 7  
 <211> 31  
 <212> PRT  
 <213> Foot-and-mouth disease virus

<400> 7  
 Tyr Asn Gly Glu Cys Arg Tyr Asn Arg Asn Ala Val Pro Asn Leu Arg  
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 Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg Thr Leu Pro  
 20 25 30

<210> 8  
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 <213> Influenza A virus

<400> 8

Tyr Arg Asn Leu Leu Trp Leu Thr Glu Lys  
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<210> 9  
 <211> 23  
 <212> PRT  
 <213> Influenza A virus

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Arg Cys Asn Gly Ser Ser Asp  
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<210> 10  
 <211> 23  
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 <213> Influenza A virus

<400> 10  
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys  
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Arg Cys Asn Asp Ser Ser Asp  
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<210> 11  
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 <212> PRT  
 <213> Yersinia pestis

<400> 11  
 Asp Ile Leu Lys Val Ile Val Asp Ser Met Asn His His Gly Asp Ala  
 1 5 10 15

Arg Ser Lys Leu Arg Glu Glu Leu Ala Glu Leu Thr Ala Glu Leu Lys  
 20 25 30

Ile Tyr Ser Val Ile Gln Ala Glu Ile Asn Lys His Leu Ser Ser Ser  
 35 40 45

Gly Thr Ile Asn Ile His Asp Lys Ser Ile Asn Leu Met Asp Lys Asn  
 50 55 60

Leu Tyr Gly Tyr Thr Asp Glu Glu Ile Phe Lys Ala Ser Ala Glu Tyr  
 65 70 75 80

Lys Ile Leu Glu Lys Met Pro Gln Thr Thr Ile Gln Val Asp Gly Ser  
 85 90 95

Glu Lys Lys Ile Val Ser Ile Lys Asp Phe Leu Gly Ser Glu Asn Lys  
 100 105 110

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130

135

140

<210> 12  
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 <213> Haemophilus influenzae

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Gly Gly Tyr

<210> 13  
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<400> 13  
 Asn Lys Leu Gly Thr Val Ser Tyr Gly Glu Glu  
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 <211> 28  
 <212> PRT  
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 <211> 28  
 <212> PRT  
 <213> Moraxella catarrhalis

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Ala Glu Leu Asp Asp Lys Tyr Ala Gly Lys Gly Tyr  
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<210> 17  
<211> 27  
<212> PRT  
<213> *Moraxella catarrhalis*

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Ile Asp Ile Glu Lys Lys Gly Lys Ile Arg Thr Glu Ala Leu Leu Ala  
1 5 10 15  
Glu Leu Asn Lys Asp Tyr Pro Gly Gln Gly Tyr  
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<210> 18  
<211> 25  
<212> PRT  
<213> *Porphyromonas gingivalis*

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Gly Val Ser Pro Lys Val Cys Lys Asp Val Thr Val Glu Gly Ser Asn  
1 5 10 15  
Glu Phe Ala Pro Val Gln Asn Leu Thr  
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<210> 19  
<211> 20  
<212> PRT  
<213> *Porphyromonas gingivalis*

<400> 19  
Arg Ile Gln Ser Thr Trp Arg Gln Lys Thr Val Asp Leu Pro Ala Gly  
1 5 10 15  
Thr Lys Tyr Val  
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<210> 20  
<211> 21  
<212> PRT  
<213> *Trypanosoma cruzi*

<400> 20  
Lys Ala Ala Ile Ala Pro Ala Lys Ala Ala Ala Ala Pro Ala Lys Ala  
1 5 10 15  
Ala Thr Ala Pro Ala  
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<210> 21  
<211> 24  
<212> PRT  
<213> *Plasmodium falciparum*

<400> 21  
Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro  
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro  
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<210> 22  
<211> 20  
<212> PRT  
<213> Plasmodium falciparum

<400> 22  
Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro  
1 5 10 15

Asn Ala Asn Pro  
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<210> 23  
<211> 20  
<212> PRT  
<213> Plasmodium falciparum

<400> 23  
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val Asp Pro  
1 5 10 15

Asn Ala Asn Pro  
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<210> 24  
<211> 28  
<212> PRT  
<213> Plasmodium falciparum

<400> 24  
Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro  
1 5 10 15

Asn Ala Asn Pro Asn Val Asp Pro Asn Ala Asn Pro  
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<210> 25  
<211> 20  
<212> PRT  
<213> Plasmodium falciparum

<400> 25  
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Asn Pro Asn Val  
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<210> 26  
<211> 22  
<212> PRT  
<213> Plasmodium falciparum

<400> 26

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Asn Pro Asn Val Asp Pro  
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<210> 27

<211> 24

<212> PRT

<213> Plasmodium falciparum

<400> 27

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Asn Pro Asn Val Asp Pro Asn Ala  
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<210> 28

<211> 18

<212> PRT

<213> Plasmodium falciparum

<400> 28

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Asn Val

<210> 29

<211> 20

<212> PRT

<213> Plasmodium falciparum

<400> 29

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Asn Val Asp Pro  
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<210> 30

<211> 22

<212> PRT

<213> Plasmodium falciparum

<400> 30

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Asn Val Asp Pro Asn Ala  
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<210> 31  
<211> 16  
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<400> 31  
Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val  
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<210> 32  
<211> 18  
<212> PRT  
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<400> 32  
Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Val  
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Asp Pro

<210> 33  
<211> 20  
<212> PRT  
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<400> 33  
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Asp Pro Asn Ala  
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<210> 34  
<211> 19  
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<400> 34  
Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln  
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Pro Ala Gly

<210> 35  
<211> 18  
<212> PRT  
<213> Plasmodium vivax

<400> 35  
Arg Ala Asp Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Gly Gln Pro  
1 5 10 15

Ala Gly



<210> 36  
<211> 18  
<212> PRT  
<213> Plasmodium vivax

<400> 36  
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln  
1 5 10 15

Pro Gly

<210> 37  
<211> 18  
<212> PRT  
<213> Plasmodium vivax

<400> 37  
Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln  
1 5 10 15

Pro Gly

<210> 38  
<211> 18  
<212> PRT  
<213> Plasmodium vivax

<400> 38  
Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Asp Asn Gln  
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Pro Gly

<210> 39  
<211> 18  
<212> PRT  
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<400> 39  
Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp Gln  
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Pro Gly

<210> 40  
<211> 22  
<212> PRT  
<213> Plasmodium vivax

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Gln Glu Gly Gly Ala Ala  
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<210> 41  
<211> 16  
<212> PRT  
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<400> 41  
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1 5 10 15

<210> 42  
<211> 24  
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<400> 42  
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1 5 10 15

Ala Pro Gln Gly Pro Gly Ala Pro  
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<211> 15  
<212> PRT  
<213> Streptococcus sobrinus

<400> 43  
Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys  
1 5 10 15

<210> 44  
<211> 16  
<212> PRT  
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<400> 44  
Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu  
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<210> 45  
<211> 9  
<212> PRT  
<213> Shigella flexneri

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Lys Asp Arg Thr Leu Ile Glu Gln Lys  
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<210> 46  
<211> 15  
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<213> respiratory syncytial virus

<400> 46

Cys Ser Ile Cys Ser Asn Asn Pro Thr Cys Trp Ala Ile Cys Lys  
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<210> 47

<211> 25

<212> PRT

<213> Entamoeba histolytica

<400> 47

Val Glu Cys Ala Ser Thr Val Cys Gln Asn Asp Asn Ser Cys Pro Ile  
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Ile Ala Asp Val Glu Lys Cys Asn Gln  
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<210> 48

<211> 34

<212> PRT

<213> Schistosoma japonicum

<400> 48

Asp Leu Gln Ser Glu Ile Ser Leu Ser Leu Glu Asn Gly Glu Leu Ile  
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Arg Arg Ala Lys Ser Ala Glu Ser Leu Ala Ser Glu Leu Gln Arg Arg  
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Val Asp

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<211> 34

<212> PRT

<213> Schistosoma mansoni

<400> 49

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Arg Arg Ala Lys Ala Ala Glu Ser Leu Ala Ser Asp Leu Gln Arg Arg  
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Val Asp

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<211> 16

<212> PRT

<213> Human immunodeficiency virus

<400> 50

Gly Pro Lys Glu Pro Phe Arg Asp Tyr Val Asp Arg Phe Tyr Lys Cys  
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<210> 51  
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 <213> Corynebacterium diphtheriae

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 Phe Gln Val Val His Asn Ser Tyr Asn Arg Pro Ala Tyr Ser Pro Gly  
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Cys

<210> 52  
 <211> 25  
 <212> PRT  
 <213> Borrelia burgdorferi

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Asn Gly Lys Val Thr Val Ser Leu Cys  
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<210> 53  
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 <212> PRT  
 <213> Borrelia burgdorferi

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Asn Asp Cys

<210> 54  
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 Ser Ser Val Ser Ser Phe Glu Arg Phe Glu Cys  
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<210> 55  
 <211> 21  
 <212> PRT  
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Ser Gly Asn Thr Cys  
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<210> 56  
 <211> 16  
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<400> 56  
 Ser Val Gln Ile Pro Lys Val Pro Tyr Pro Asn Gly Ile Val Tyr Cys  
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<210> 57  
 <211> 16  
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<400> 57  
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<210> 58  
 <211> 18  
 <212> PRT  
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<400> 58  
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Ser Cys

<210> 59  
 <211> 20  
 <212> PRT  
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<400> 59  
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Cys Ser Val Thr  
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<210> 60  
 <211> 19  
 <212> PRT  
 <213> Plasmodium vivax

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Ser Val Thr

<210> 61  
 <211> 16  
 <212> PRT  
 <213> Streptococcus sobrinus

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 Lys Pro Arg Pro Ile Tyr Glu Ala Lys Leu Ala Gln Asn Gln Lys Cys  
 1 5 10 15

<210> 62  
 <211> 17  
 <212> PRT  
 <213> Streptococcus sobrinus

<400> 62  
 Ala Lys Ala Asp Tyr Glu Ala Lys Leu Ala Gln Tyr Glu Lys Asp Leu  
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Cys

<210> 63  
 <211> 16  
 <212> PRT  
 <213> Lymphocytic choriomeningitis virus

<400> 63  
 Arg Pro Gln Ala Ser Gly Val Tyr Met Gly Asn Leu Thr Ala Gln Cys  
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<210> 64  
 <211> 16  
 <212> PRT  
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<210> 66  
 <211> 55  
 <212> DNA  
 <213> plasmid pKK223

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<210> 67  
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 <212> DNA  
 <213> Hepatitis B virus  
  
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 <210> 68  
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 <212> DNA  
 <213> Hepatitis B virus  
  
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 gcggaattcc ttccaaatta acaccacc 29  
  
 <210> 69  
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 <212> DNA  
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 <400> 69  
 cgcggaattca aaaagagctc gatccagcgt ctagagac 38  
  
 <210> 70  
 <211> 31  
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 <213> Hepatitis B virus  
  
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 <223> Description of Artificial Sequence: human  
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 <210> 72  
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 <210> 73  
 <211> 39  
 <212> DNA

<213> Hepatitis B virus

<400> 73

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39

<210> 74

<211> 39

<212> DNA

<213> Artificial Sequence

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39

<210> 75

<211> 42

<212> DNA

<213> Hepatitis B virus

<400> 75

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<210> 76

<211> 28

<212> DNA

<213> Hepatitis B virus

<400> 76

cgcgagctcc cagcgtctag agacctag

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<212> PRT

<213> Plasmodium falciparum

<400> 78

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5

10

15

Pro Glu Leu

<210> 79

<211> 57



<212> DNA  
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 <210> 80  
 <211> 49  
 <212> DNA  
 <213> Plasmodium falciparum  
  
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 <212> PRT  
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 <212> DNA  
 <213> Plasmodium falciparum  
  
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 tagcgttcgg gtcaacgttc ggattagcgt t 91  
  
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 <213> Plasmodium falciparum  
  
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 Pro Asn Ala Asn Pro Glu Leu  
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<210> 85  
 <211> 69  
 <212> DNA  
 <213> Plasmodium falciparum  
  
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 cccagagct 69  
  
 <210> 86  
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 <210> 87  
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 <213> Plasmodium falciparum  
  
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 Pro Asn Ala Asn Pro Glu Leu  
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 <212> DNA  
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 <210> 89  
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1	5	10	15
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20 25 30

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ttggatccac gttcggattc gcgtt 85

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Ala Asn Pro Asn Val Glu Leu  
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<210> 94  
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<212> DNA  
<213> Plasmodium falciparum

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tgttgagct 69

<210> 95  
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<212> DNA  
<213> Plasmodium falciparum

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<210> 96  
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<212> PRT

<213> Plasmodium falciparum

<400> 96

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Ala Asn Pro Asn Val Asp Pro Glu Leu  
20 25

<210> 97

<211> 75

<212> DNA

<213> Plasmodium falciparum

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<210> 98

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<212> DNA

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<400> 98

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<211> 27

<212> PRT

<213> Plasmodium falciparum

<400> 99

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Ala Asn Pro Asn Val Asp Pro Asn Ala Glu Leu  
20 25

<210> 100

<211> 81

<212> DNA

<213> Plasmodium falciparum

<400> 100

aattaatccg aacgtggatc caaatgccaa ccctaacgct aatccaaacg ccaacccgaa 60  
tgttgaccct aatgctgagc t 81

<210> 101

<211> 73

<212> DNA

<213> Plasmodium falciparum

<400> 101

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73

<210> 102

<211> 21

<212> PRT

<213> Plasmodium falciparum

<400> 102

Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn  
1 5 10 15

Pro Asn Val Glu Leu  
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<210> 103

<211> 63

<212> DNA

<213> Plasmodium falciparum

<400> 103

aattaacgtg gatccaaatg ccaaccctaa cgctaatacca aacgccaacc cgaatgttga 60  
gct 63

<210> 104

<211> 55

<212> DNA

<213> Plasmodium falciparum

<400> 104

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<211> 23

<212> PRT

<213> Plasmodium falciparum

<400> 105

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1 5 10 15

Pro Asn Val Asp Pro Glu Leu  
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<210> 106

<211> 69

<212> DNA

<213> Plasmodium falciparum

<400> 106

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<210> 107

<211> 61

<212> DNA

<213> Plasmodium falciparum

<400> 107

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<210> 108

<211> 25

<212> PRT

<213> Plasmodium falciparum

<400> 108

Ile Asn Val Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn  
1 5 10 15

Pro Asn Val Asp Pro Asn Ala Glu Leu  
20 25

<210> 109

<211> 75

<212> DNA

<213> Plasmodium falciparum

<400> 109

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<210> 110

<211> 67

<212> DNA

<213> Plasmodium falciparum

<400> 110

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<210> 111

<211> 19

<212> PRT

<213> Plasmodium falciparum

<400> 111

Ile Asp Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn  
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Val Glu Leu

<210> 112

<211> 57

<212> DNA

<213> Plasmodium falciparum

<400> 112

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 <212> DNA  
 <213> Plasmodium falciparum  
  
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 <210> 114  
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 <212> PRT  
 <213> Plasmodium falciparum  
  
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 1 5 10 15  
 Val Asp Pro Glu Leu  
 20  
  
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 <211> 63  
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 <213> Plasmodium falciparum  
  
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 gct 63  
  
 <210> 116  
 <211> 55  
 <212> DNA  
 <213> Plasmodium falciparum  
  
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 <210> 117  
 <211> 23  
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 <213> Plasmodium falciparum  
  
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 1 5 10 15  
 Val Asp Pro Asn Ala Glu Leu  
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 <212> DNA  
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tgccgagct 69

<210> 119  
<211> 61  
<212> DNA  
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c 61

<210> 120  
<211> 21  
<212> PRT  
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<400> 120  
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1 5 10 15  
Pro Cys Ser Val Thr  
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<210> 121  
<211> 69  
<212> DNA  
<213> Plasmodium falciparum

<400> 121  
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tacctagta 69

<210> 122  
<211> 69  
<212> DNA  
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<400> 122  
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cagatattc 69

<210> 123  
<211> 24  
<212> PRT  
<213> Plasmodium vivax

<400> 123  
Ile Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala  
1 5 10 15  
Ala Gly Gln Pro Ala Gly Glu Leu  
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<210> 124



<211> 72  
<212> DNA  
<213> Plasmodium vivax

<400> 124  
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ggctggcgag ct 72

<210> 125  
<211> 64  
<212> DNA  
<213> Plasmodium vivax

<400> 125  
cgccagccgg ctggcctgca gcgcgggtcac ccgctggctg gccatctgca cggtcaccag 60  
ccgg 64

<210> 126  
<211> 21  
<212> PRT  
<213> Plasmodium vivax

<400> 126  
Ile Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln  
1 5 10 15  
Pro Ala Gly Glu Leu  
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<210> 127  
<211> 63  
<212> DNA  
<213> Plasmodium vivax

<400> 127  
aattgacaga gcagccggac aaccagcagg cgatcgagca gacggacagc ccgcagggga 60  
gct 63

<210> 128  
<211> 55  
<212> DNA  
<213> Plasmodium vivax

<400> 128  
cccctgcggg ctgtccgtct gctcgatcgc ctgctgggtg tccggctgct ctgtc 55

<210> 129  
<211> 21  
<212> PRT  
<213> Plasmodium vivax

<400> 129  
Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp  
1 5 10 15  
Gln Pro Gly Glu Leu

<210> 130  
 <211> 63  
 <212> DNA  
 <213> Plasmodium vivax

<400> 130  
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 gct 63

<210> 131  
 <211> 55  
 <212> DNA  
 <213> Plasmodium vivax

<400> 131  
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<210> 132  
 <211> 21  
 <212> PRT  
 <213> Plasmodium vivax

<400> 132  
 Ile Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp  
 1 5 10 15  
 Gln Pro Gly Glu Leu  
 20

<210> 133  
 <211> 63  
 <212> DNA  
 <213> Plasmodium vivax

<400> 133  
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 gct 63

<210> 134  
 <211> 55  
 <212> DNA  
 <213> Plasmodium vivax

<400> 134  
 cgccctggttg gtcattccgc ccgtttgcac ccggttgatt atcggcgccg ttcgc 55

<210> 135  
 <211> 39  
 <212> PRT  
 <213> Plasmodium vivax

<400> 135  
 Ile Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp



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<210> 141
<211> 21
<212> PRT
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<211> 69
<212> DNA
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<211> 69
<212> DNA
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<210> 144
<211> 10
<212> PRT
<213> Plasmodium falciparum
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<211> 42
<212> DNA
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<211> 44
<212> DNA
<213> Plasmodium vivax
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<210> 147  
<211> 8  
<212> PRT  
<213> Hepatitis B virus

<400> 147  
Cys Val Val Thr Thr Glu Pro Leu  
1 5

<210> 148  
<211> 37  
<212> DNA  
<213> Hepatitis B virus

<400> 148  
cgcaagctta ctagcaaaca acagtagtct ccggaag

37

<210> 149  
<211> 7  
<212> PRT  
<213> Hepatitis B virus

<400> 149  
Pro Leu Thr Ser Leu Ile Pro  
1 5

<210> 150  
<211> 32  
<212> DNA  
<213> Hepatitis B virus

<400> 150  
cgcaagctta cggaagtgtt gataggatag gg

32

<210> 151  
<211> 8  
<212> PRT  
<213> Hepatitis B virus

<400> 151  
Thr Ser Leu Ile Pro Ala Asn Pro  
1 5

<210> 152  
<211> 34  
<212> DNA  
<213> Hepatitis B virus

<400> 152  
cgcaagctta tgttgatagg ataggggcat ttgg

34

<210> 153  
<211> 7  
<212> PRT

<213> Hepatitis B virus

<400> 153

Leu Ile Pro Ala Asn Pro Pro  
1 5

<210> 154

<211> 31

<212> DNA

<213> Hepatitis B virus

<400> 154

cgcaagctta taggataggg gcatttggtg g

31

<210> 155

<211> 6

<212> PRT

<213> Hepatitis B virus

<400> 155

Ile Pro Ala Asn Pro Pro  
1 5

<210> 156

<211> 28

<212> DNA

<213> Hepatitis B virus

<400> 156

gcgaagctta gataggggca tttggtgg

28

<210> 157

<211> 6

<212> PRT

<213> Hepatitis B virus

<400> 157

Pro Ala Asn Pro Pro Arg  
1 5

<210> 158

<211> 28

<212> DNA

<213> Hepatitis B virus

<400> 158

cgcaagctta aggggcattt ggtggtct

28

<210> 159

<211> 7

<212> PRT

<213> Hepatitis B virus

<400> 159

Cys Pro Ala Asn Pro Pro Arg

1 5

<210> 160  
 <211> 7  
 <212> PRT  
 <213> Hepatitis B virus

<400> 160  
 Ala Asn Pro Pro Arg Tyr Ala  
 1 5

<210> 161  
 <211> 31  
 <212> DNA  
 <213> Hepatitis B virus

<400> 161  
 gcgaagctta gcaaggggca tttggtggtc t 31

<210> 162  
 <211> 30  
 <212> DNA  
 <213> Hepatitis B virus

<400> 162  
 gcgaagctta ggcatttggt ggtctatagc 30

<210> 163  
 <211> 8  
 <212> PRT  
 <213> Hepatitis B virus

<400> 163  
 Cys Ala Asn Pro Pro Arg Tyr Ala  
 1 5

<210> 164  
 <211> 32  
 <212> DNA  
 <213> Hepatitis B virus

<400> 164  
 gcgaagctta gcaggcattt ggtggtctat aa 32

<210> 165  
 <211> 7  
 <212> PRT  
 <213> Hepatitis B virus

<400> 165  
 Asn Pro Pro Arg Tyr Ala Pro  
 1 5

<210> 166

<211> 31  
 <212> DNA  
 <213> Hepatitis B virus  
  
 <400> 166  
 cgcaagctta atttggtggt ctataagctg g

31

<210> 167  
 <211> 8  
 <212> PRT  
 <213> Plasmodium falciparum  
  
 <400> 167  
 Asn Ala Asn Pro Asn Val Asp Pro  
 1 5

<210> 168  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 168  
 Asn Tyr Lys Lys Pro Lys  
 1 5

<210> 169  
 <211> 7  
 <212> PRT  
 <213> Hepatitis B virus  
  
 <400> 169  
 Lys Arg Gly Pro Arg Thr His  
 1 5

<210> 170  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 170  
 Leu His Pro Asp Glu Thr Lys Asn Met Leu Glu Met Ile Phe Thr Pro  
 1 5 10 15  
  
 Arg Asn Ser Asp Arg  
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<210> 171  
 <211> 5  
 <212> PRT  
 <213> Human immunodeficiency virus type 1  
  
 <400> 171  
 Arg Ile Lys Gln Ile  
 1 5



<210> 172  
 <211> 11  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 172  
 Arg Ile Lys Gln Ile Gly Met Pro Gly Gly Lys  
 1 5 10

<210> 173  
 <211> 10  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 173  
 Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu  
 1 5 10

<210> 174  
 <211> 14  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 174  
 Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala Ser Leu Trp  
 1 5 10

<210> 175  
 <211> 33  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 175  
 Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu Ala Gln Gln His  
 1 5 10 15  
 Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg Ile  
 20 25 30

Leu

<210> 176  
 <211> 16  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 176  
 His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln Leu Gln Ala Arg  
 1 5 10 15

<210> 177  
 <211> 36  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 177

Tyr Thr His Ile Ile Tyr Ser Leu Ile Glu Gln Ser Gln Asn Gln Gln  
1 5 10 15

Glu Lys Asn Glu Gln Glu Leu Leu Ala Leu Asp Lys Trp Ala Ser Leu  
20 25 30

Trp Asn Trp Phe  
35

<210> 178

<211> 26

<212> PRT

<213> Human immunodeficiency virus type 1

<400> 178

Tyr Thr His Ile Ile Tyr Ser Leu Ile Glu Gln Ser Gln Asn Gln Gln  
1 5 10 15

Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu  
20 25

<210> 179

<211> 19

<212> PRT

<213> Homo sapiens

<400> 179

Gly Arg Glu Arg Arg Pro Arg Leu Ser Asp Arg Pro Gln Leu Pro Tyr  
1 5 10 15

Leu Glu Ala

<210> 180

<211> 20

<212> PRT

<213> Homo sapiens

<400> 180

Arg Glu Gln Arg Arg Phe Ser Val Ser Thr Leu Arg Asn Leu Gly Leu  
1 5 10 15

Gly Lys Lys Ser  
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<210> 181

<211> 18

<212> PRT

<213> Plasmodium yoelii

<400> 181

Pro Asn Lys Leu Pro Arg Ser Thr Ala Val Val His Gln Leu Lys Arg  
1 5 10 15

Lys His

<210> 182  
<211> 11  
<212> PRT  
<213> Plasmodium yoelii

<400> 182  
Thr Ala Val Val His Gln Leu Lys Arg Lys His  
1 5 10

<210> 183  
<211> 22  
<212> PRT  
<213> Plasmodium vivax

<400> 183  
Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Ala  
1 5 10 15

Ala Gly Gln Pro Ala Gly  
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<210> 184  
<211> 12  
<212> PRT  
<213> Avian leukosis virus

<400> 184  
Asn Gln Ser Trp Thr Met Val Ser Pro Ile Asn Val  
1 5 10

<210> 185  
<211> 16  
<212> PRT  
<213> Avian leukosis virus

<400> 185  
Met Ile Lys Asn Gly Thr Lys Arg Thr Ala Val Thr Phe Gly Ser Val  
1 5 10 15

<210> 186  
<211> 19  
<212> PRT  
<213> Foot-and-mouth disease virus

<400> 186  
Pro Asn Leu Arg Gly Asp Leu Gln Val Leu Ala Gln Lys Val Ala Arg  
1 5 10 15

Thr Leu Pro

<210> 187  
<211> 26  
<212> PRT

<213> Foot-and-mouth disease virus

<400> 187

Arg Tyr Asn Arg Asn Ala Val Pro Asn Leu Arg Gly Asp Leu Gln Val  
1 5 10 15

Leu Ala Gln Lys Val Ala Arg Thr Leu Pro  
20 25

<210> 188

<211> 17

<212> PRT

<213> Hepatitis C virus

<400> 188

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys  
1 5 10 15

Leu

<210> 189

<211> 34

<212> PRT

<213> Hepatitis B virus

<400> 189

Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg  
1 5 10 15

Arg Arg Ser Gln Ser Pro Arg Arg Arg Ser Gln Ser Arg Glu Ser  
20 25 30

Gln Cys

<210> 190

<211> 16

<212> PRT

<213> Hepatitis B virus

<400> 190

Gly Ile Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser  
1 5 10 15

<210> 191

<211> 17

<212> PRT

<213> Hepatitis B virus

<400> 191

Gly Ile Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val Val Ser  
1 5 10 15

Cys

<210> 192  
 <211> 20  
 <212> PRT  
 <213> Plasmodium falciparum

<400> 192  
 Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro  
     1                    5                    10                    15  
 Cys Ser Val Thr  
                     20

<210> 193  
 <211> 9  
 <212> PRT  
 <213> Plasmodium vivax

<220>  
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 <222> (4)  
 <223> Xaa at position 4 represents A or D

<400> 193  
 Asp Arg Ala Xaa Gly Gln Pro Ala Gly  
     1                    5

<210> 194  
 <211> 9  
 <212> PRT  
 <213> Plasmodium vivax

<220>  
 <221> MOD\_RES  
 <222> (5)  
 <223> Xaa at position 5 represents G or D

<400> 194  
 Ala Asn Gly Ala Xaa Asx Gln Pro Gly  
     1                    5

<210> 195  
 <211> 11  
 <212> PRT  
 <213> Plasmodium vivax

<400> 195  
 Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala  
     1                    5                    10

<210> 196  
 <211> 19  
 <212> PRT  
 <213> Plasmodium vivax

<400> 196  
 Tyr Leu Asp Lys Val Arg Ala Thr Val Gly Thr Glu Trp Thr Pro Cys

1	5	10	15
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Ser Val Thr

<210> 197  
 <211> 21  
 <212> PRT  
 <213> Plasmodium vivax

<400> 197  
 Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro Ala Gly Asp Arg Ala Ala  
       1                  5                  10                  15

Gly Gln Pro Ala Gly  
                   20

<210> 198  
 <211> 18  
 <212> PRT  
 <213> Plasmodium vivax

<400> 198  
 Asp Arg Ala Ala Gly Gln Pro Ala Gly Asp Arg Ala Asp Gly Gln Pro  
       1                  5                  10                  15

Ala Gly

<210> 199  
 <211> 36  
 <212> PRT  
 <213> Plasmodium vivax

<400> 199  
 Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln  
       1                  5                  10                  15

Pro Gly Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp  
                   20                  25                  30

Asp Gln Pro Gly  
                   35

<210> 200  
 <211> 18  
 <212> PRT  
 <213> Plasmodium vivax

<400> 200  
 Ala Asn Gly Ala Gly Asn Gln Pro Gly Ala Asn Gly Ala Gly Asp Gln  
       1                  5                  10                  15

Pro Gly

<210> 201  
<211> 19  
<212> PRT  
<213> Plasmodium vivax

<400> 201  
Gln Ala Asn Gly Ala Asp Asn Gln Pro Gly Ala Asn Gly Ala Asp Asp  
1 5 10 15

Gln Pro Gly

<210> 202  
<211> 22  
<212> PRT  
<213> Plasmodium vivax

<400> 202  
Ala Pro Gly Ala Asn Gln Glu Gly Gly Ala Ala Ala Pro Gly Ala Asn  
1 5 10 15

Gln Glu Gly Gly Ala Ala  
20

<210> 203  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hepatitis B  
virus PCR primer with an NcoI restriction site

<400> 203  
ttgggccatg gacatcgacc ctta 24

<210> 204  
<211> 34  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hepatitis B  
virus PCR primer with an EcoRI restriction site.

<400> 204  
gcggagctct ttttccaaat taattaacac ccac 34

<210> 205  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hepatitis B  
virus PCR primer with EcoRI and SacI restriction  
sites and an inserted lysine codon

<400> 205  
cgcgagctcg atccagcgtc tagagagacc 30

<210> 206  
<211> 31  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Hepatitis B  
virus PCR primer with HindIII restriction site

<400> 206  
cgcaagctta aacaacagta gtctccggaa g 31

<210> 207  
<211> 14  
<212> PRT  
<213> Hepatitis B virus

<400> 207  
Cys Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu  
1 5 10

<210> 208  
<211> 13  
<212> PRT  
<213> Hepatitis B virus

<400> 208  
Cys Ser Lys Lys Gly Pro Arg Ala Ser Gly Asn Leu Ile  
1 5 10

<210> 209  
<211> 21  
<212> PRT  
<213> Hepatitis B virus

<400> 209  
Cys Leu Leu Thr Glu His Arg Met Thr Trp Asp Pro Ala Gln Pro Pro  
1 5 10 15

Arg Asp Leu Thr Glu  
20

<210> 210  
<211> 22  
<212> PRT  
<213> Hepatitis B virus

<400> 210  
Cys Val Lys Arg Met Lys Glu Ser Arg Leu Glu Asp Thr Gln Lys His  
1 5 10 15

Arg Val Asp Phe Leu Gln



<210> 211  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Cytochrome  
 P-450 fragment

<400> 211  
 Cys Met Gln Leu Arg Ser  
 1 5

<210> 212  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Cytochrome  
 P-450 fragment

<400> 212  
 Cys Arg Phe Ser Ile Asn  
 1 5

<210> 213  
 <211> 5  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Cytochrome  
 P-450 fragment

<400> 213  
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 1 5

<210> 214  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Cytochrome  
 P-450 fragment

<400> 214  
 Cys Val Ile Pro Arg Ser  
 1 5

<210> 215  
 <211> 5

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Cytochrome  
           P-450 fragment  
  
 <400> 215  
 Cys Phe Ile Pro Val  
      1                  5  
  
  
 <210> 216  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Cytochrome  
           P-450 fragment  
  
 <400> 216  
 Cys Thr Val Ser Gly Ala  
      1                  5  
  
  
 <210> 217  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Cytochrome  
           P-450 fragment  
  
 <400> 217  
 Cys Thr Leu Ser Gly Glu  
      1                  5  
  
  
 <210> 218  
 <211> 20  
 <212> PRT  
 <213> Hepatitis B virus  
  
 <400> 218  
 Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val  
      1                  5                  10                  15  
  
 Val Ser Tyr Val  
                   20  
  
  
 <210> 219  
 <211> 63  
 <212> DNA  
 <213> Hepatitis B virus  
  
 <400> 219  
 gctacctggg tgggtgttaa ttggaagat ccagcgtcta gagacctagt agtcagttat 60  
 gtc  63

<210> 220  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 75 of Hepatitis B core

<400> 220  
Thr Trp Val Gly Val Lys Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 221  
<211> 41  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc- K75 mutant

<400> 221  
gctacctggg tgggtgttaa aaatttgga gatccagcgt c 41

<210> 222  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 76 of Hepatitis B core

<400> 222  
Thr Trp Val Gly Val Asn Lys Leu Glu Asp Pro Ala Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 223  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K76 mutant

<400> 223  
ttaataaatt ggaagatcca gcgtcta 27

<210> 224  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
position 77 of Hepatitis B virus core

<400> 224  
Thr Trp Val Gly Val Asn Leu Lys Glu Asp Pro Ala Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 225  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K77 mutant

<400> 225  
ttaatttgaa agaagatcca gcgtcta 27

<210> 226  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 78 of Hepatitis B core

<400> 226  
Thr Trp Val Gly Val Asn Leu Glu Lys Asp Pro Ala Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 227  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K78 mutant

<400> 227  
ttaatttgga aaaagatcca gcgtctagag ac 32

<210> 228  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 79 fo Hepatitis B core.

<400> 228  
Thr Trp Val Gly Val Asn Leu Glu Asp Lys Pro Ala Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 229  
<211> 36  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K79 mutant

<400> 229  
ttaatttggga agataaacca gcgtctagag acctag 36

<210> 230  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 79 of Hepatitis B core

<400> 230  
Thr Trp Val Gly Val Asn Leu Glu Asp Pro Lys Ala Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 231  
<211> 39  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K80 mutant

<400> 231  
ttaatttggga agatccaaaa gcgtctagag acctagtag 39

<210> 232

<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 81 of Hepatitis B core

<400> 232  
Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Lys Ser Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 233  
<211> 43  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K81 mutant

<400> 233  
ttaatttggga agatccagcg aaatctagag acctagtagt cag 43

<210> 234  
<211> 21  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: K inserted at  
amino acid position 82 of Hepatitis B core

<400> 234  
Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Lys Arg Asp Leu  
1 5 10 15  
Val Val Ser Tyr Val  
20

<210> 235  
<211> 45  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Lysine codon  
aaa inserted to make HBc-K82 mutant

<400> 235  
ttaatttggga agatccagcg tctaaaagag acctagtagt cagtt 45

<210> 236  
<211> 21

<212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: K inserted at  
           amino acid position 83 to Hepatitis B core  
  
 <400> 236  
 Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Lys Asp Leu  
       1                  5                  10                  15  
 Val Val Ser Tyr Val  
                   20  
  
 <210> 237  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Lysine codon  
           aaa inserted to make HBc-K83 mutant  
  
 <400> 237  
 ttaatttgga agatccagcg tctagaaaag acctagtagt cagttatgtc 50  
  
 <210> 238  
 <211> 21  
 <212> PRT  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: K inserted at  
           amino acid position 83 of Hepatitis B core  
  
 <400> 238  
 Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Lys Leu  
       1                  5                  10                  15  
 Val Val Ser Tyr Val  
                   20  
  
 <210> 239  
 <211> 50  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> Description of Artificial Sequence: Lysine codon  
           aaa inserted to make HBc-K84 mutant  
  
 <400> 239  
 ttaatttgga agatccagcg tctagagaca aactagtagt cagttatgtc 50  
  
 <210> 240  
 <211> 21  
 <212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: K inserted at amino acid position 85 of Hepatitis B core

<400> 240

Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Lys  
1 5 10 15

Val Val Ser Tyr Val  
20

<210> 241

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: Lysine codon aaa inserted to make HBc-K85 mutant

<400> 241

ctcgagagac ctaaaagtag tcagttatgt c 31

<210> 242

<211> 36

<212> PRT

<213> Hepatitis B virus

<400> 242

Gly Ile Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser  
1 5 10 15

Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn  
20 25 30

Glu Gln Glu Leu  
35

<210> 243

<211> 102

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: human cytochrome P450

<400> 243

aatttgatg tgggaagatc gtgagatcaa caattatacc agcctgatac attctttaat 60  
tgaagagtcc cagaaccaac aggagaaaaa tgaacaagag ct 102

<210> 244

<211> 94

<212> DNA

<213> Hepatitis B virus



<400> 244  
 cttgttcatt tttctcctgt tgggtctggg actcttcaat taaagaatgt atcaggctgg 60  
 tataattggt gatctcacga tcttccaca tcca 94

<210> 245  
 <211> 6  
 <212> PRT  
 <213> Hepatitis B virus

<400> 245  
 Met Asp Ile Asp Pro Tyr  
 1 5

<210> 246  
 <211> 217  
 <212> PRT  
 <213> *Spermophilus variegatus*

<400> 246  
 Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro  
 1 5 10 15  
 Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp  
 20 25 30  
 Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe  
 35 40 45  
 Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala  
 50 55 60  
 Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro  
 65 70 75 80  
 His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr  
 85 90 95  
 Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg  
 100 105 110  
 Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln  
 115 120 125  
 Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln His Thr Val  
 130 135 140  
 Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro  
 145 150 155 160  
 Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr  
 165 170 175  
 Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg  
 180 185 190  
 Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg  
 195 200 205

Arg Ser Gln Ser Pro Ala Ser Asn Cys  
210 215

<210> 247  
<211> 183  
<212> PRT  
<213> Hepatitis B virus

<400> 247  
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
1 5 10 15  
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
20 25 30  
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
35 40 45  
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
50 55 60  
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala  
65 70 75 80  
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys  
85 90 95  
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg  
100 105 110  
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr  
115 120 125  
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro  
130 135 140  
Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr  
145 150 155 160  
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser  
165 170 175  
Gln Ser Arg Glu Ser Gln Cys  
180

<210> 248  
<211> 185  
<212> PRT  
<213> Hepatitis B virus

<400> 248  
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
1 5 10 15  
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
20 25 30  
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
 50 55 60  
 Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Gln Asp Pro Ala  
 65 70 75 80  
 Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys  
 85 90 95  
 Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg  
 100 105 110  
 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr  
 115 120 125  
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro  
 130 135 140  
 Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg  
 145 150 155 160  
 Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg  
 165 170 175  
 Arg Ser Gln Ser Arg Glu Ser Gln Cys  
 180 185

<210> 249  
 <211> 185  
 <212> PRT  
 <213> Hepatitis B virus

<400> 249  
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
 1 5 10 15  
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
 20 25 30  
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
 35 40 45  
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
 50 55 60  
 Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala  
 65 70 75 80  
 Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Val Gly Leu Lys  
 85 90 95  
 Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg  
 100 105 110  
 Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr  
 115 120 125  
 Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro  
 130 135 140

Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg  
145 150 155 160

Arg Thr Pro Ser Pro Arg Arg Arg Pro Ser Gln Ser Pro Arg Arg Arg  
165 170 175

Arg Ser Gln Ser Arg Glu Ser Gln Cys  
180 185

<210> 250

<211> 183

<212> PRT

<213> Hepatitis B virus

<400> 250

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
20 25 30

Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys  
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp  
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala  
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys  
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg  
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr  
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro  
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr  
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser  
165 170 175

Gln Ser Arg Glu Ser Gln Cys  
180

<210> 251

<211> 183

<212> PRT

<213> Marmota monax

<400> 251

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu

1		5		10		15									
Asn	Phe	Leu	Pro	Leu	Asp	Phe	Phe	Pro	Asp	Leu	Asn	Ala	Leu	Val	Asp
		20						25					30		
Thr	Ala	Thr	Ala	Leu	Tyr	Glu	Glu	Glu	Leu	Thr	Gly	Arg	Glu	His	Cys
		35				40						45			
Ser	Pro	His	His	Thr	Ala	Ile	Arg	Gln	Ala	Leu	Val	Cys	Trp	Asp	Glu
	50					55					60				
Leu	Thr	Lys	Leu	Ile	Ala	Trp	Met	Ser	Ser	Asn	Ile	Thr	Ser	Glu	Gln
65					70					75					80
Val	Arg	Thr	Ile	Ile	Val	Asn	His	Val	Asn	Asp	Thr	Trp	Gly	Leu	Lys
			85						90					95	
Val	Arg	Gln	Ser	Leu	Trp	Phe	His	Leu	Ser	Cys	Leu	Thr	Phe	Gly	Gln
			100					105					110		
His	Thr	Val	Gln	Glu	Phe	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr
		115					120					125			
Pro	Ala	Pro	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro
	130					135					140				
Glu	His	Thr	Val	Ile	Arg	Arg	Arg	Gly	Gly	Ala	Arg	Ala	Ser	Arg	Ser
145					150					155					160
Pro	Arg	Arg	Arg	Thr	Pro	Ser	Pro	Arg	Arg	Arg	Arg	Ser	Gln	Ser	Pro
				165					170				175		
Arg	Arg	Arg	Arg	Ser	Gln	Cys									
				180											

<210> 252  
 <211> 26  
 <212> PRT  
 <213> Bos taurus

<400> 252
Ser Thr Pro Pro Leu Pro Trp Pro Trp Ser Pro Ala Ala Leu Arg Leu
1 5 10 15
Leu Gln Arg Pro Pro Glu Glu Pro Ala Ala
20 25

<210> 253  
 <211> 17  
 <212> PRT  
 <213> Ebola virus

<400> 253
Ala Thr Gln Val Glu Gln His His Arg Arg Thr Asp Asn Asp Ser Thr
1 5 10 15

Ala

<210> 254  
<211> 17  
<212> PRT  
<213> Ebola virus

<400> 254  
His Asn Thr Pro Val Tyr Lys Leu Asp Ile Ser Glu Ala Thr Gln Val  
1 5 10 15  
Glu

<210> 255  
<211> 17  
<212> PRT  
<213> Ebola virus

<400> 255  
Gly Lys Leu Gly Leu Ile Thr Asn Thr Ile Ala Gly Val Ala Val Leu  
1 5 10 15  
Ile

<210> 256  
<211> 10  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence:flexible linker  
arm

<400> 256  
Gly Gly Gly Gly Ser Gly Gly Gly Gly Thr  
1 5 10

<210> 257  
<211> 9  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: flexible  
linker arm

<400> 257  
Gly Gly Gly Gly Ser Gly Gly Gly Gly  
1 5

<210> 258  
<211> 513  
<212> DNA  
<213> Plasmodium falciparum

<220>

<221> CDS

<222> (1)..(507)

<400> 258

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atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc      48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
   1               5               10               15

tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat      96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
               20               25               30

acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt      144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
               35               40               45

tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa      192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
   50               55               60

cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att      240
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile
   65               70               75               80

aac gct aat ccg aac gct aat ccg aac gct aat ccg aac gct aat ccg      288
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro
               85               90               95

gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat      336
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn
               100               105               110

atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc      384
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu
               115               120               125

act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg      432
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val
               130               135               140

tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta      480
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
   145               150               155               160

tca aca ctt ccg gag act act gtt gtt tagtaa                          513
Ser Thr Leu Pro Glu Thr Thr Val Val
               165
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<210> 259

<211> 169

<212> PRT

<213> Plasmodium falciparum

<400> 259

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Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
   1               5               10               15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
               20               25               30
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Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
           35                          40                          45  
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
           50                          55                          60  
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile  
           65                          70                          75                          80  
 Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro  
                           85                          90                          95  
 Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn  
                           100                          105                          110  
 Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu  
           115                          120                          125  
 Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val  
           130                          135                          140  
 Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu  
           145                          150                          155                          160  
 Ser Thr Leu Pro Glu Thr Thr Val Val  
                           165

<210> 260  
 <211> 513  
 <212> DNA  
 <213> Plasmodium falciparum

<220>  
 <221> CDS  
 <222> (1)..(507)

<400> 260  
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   1                          5                          10                          15  
 tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96  
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
           20                          25                          30  
 acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144  
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
           35                          40                          45  
 tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192  
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
           50                          55                          60  
 cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gga att aac 240  
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Gly Ile Asn  
           65                          70                          75                          80  
 gct aat ccg aac gct aat ccg aac gct aat ccg aac gct aat ccg gag 288  
 Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Glu



85										90					95					
ctc	gat	cca	gcg	tct	aga	gac	cta	gta	gtc	agt	tat	gtc	aac	act	aat	336				
Leu	Asp	Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn					
			100					105					110							
atg	ggc	cta	aag	ttc	agg	caa	ctc	ttg	tgg	ttt	cac	att	tct	tgt	ctc	384				
Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu					
		115					120					125								
act	ttt	gga	aga	gaa	aca	ggt	ata	gag	tat	ttg	gtg	tct	ttc	gga	gtg	432				
Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val					
	130					135					140									
tgg	att	cgc	act	cct	cca	gct	tat	aga	cca	cca	aat	gcc	cct	atc	cta	480				
Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu					
145					150				155						160					
tca	aca	ctt	ccg	gag	act	act	ggt	ggt	tagtaa							513				
Ser	Thr	Leu	Pro	Glu	Thr	Thr	Val	Val												
				165																

<210> 261

<211> 169

<212> PRT

<213> Plasmodium falciparum

<400> 261

Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu
1				5					10					15	
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp
			20					25					30		
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys
	35					40						45			
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu
	50					55					60				
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Gly	Ile	Asn
65					70					75				80	
Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Glu
				85					90					95	
Leu	Asp	Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn
			100					105					110		
Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu
		115					120					125			
Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val
	130					135					140				
Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu
145					150					155					160
Ser	Thr	Leu	Pro	Glu	Thr	Thr	Val	Val							
				165											

<210> 262  
 <211> 519  
 <212> DNA  
 <213> Plasmodium falciparum

<220>  
 <221> CDS  
 <222> (1)..(519)

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<400> 262
atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1          5          10          15

tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
          20          25          30

acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
          35          40          45

tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
          50          55          60

cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat cca gcg 240
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
          65          70          75          80

tct aga gac cta gta gtc agt tat gtc aac act aat atg ggc cta aag 288
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
          85          90          95

ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc act ttt gga aga 336
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
          100          105          110

gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg tgg att cgc act 384
Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
          115          120          125

cct cca gct tat aga cca cca aat gcc cct atc cta tca aca ctt ccg 432
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
          130          135          140

gag act act gtt gtt gga att gaa tat ctg aac aaa atc cag aac tct 480
Glu Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser
          145          150          155          160

ctg tcc acc gaa tgg tct ccg tgc tcc gtt acc tag taa 519
Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr
          165          170

```

<210> 263  
 <211> 171  
 <212> PRT

<213> Plasmodium falciparum

<400> 263

Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	
1				5					10					15		
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	
			20					25					30			
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	
		35					40					45				
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	
	50					55					60					
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Pro	Ala	
65					70					75					80	
Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	
				85					90					95		
Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	
		100						105					110			
Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	
	115					120						125				
Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	
	130					135					140					
Glu	Thr	Thr	Val	Val	Gly	Ile	Glu	Tyr	Leu	Asn	Lys	Ile	Gln	Asn	Ser	
145					150					155					160	
Leu	Ser	Thr	Glu	Trp	Ser	Pro	Cys	Ser	Val	Thr						
				165					170							

<210> 264

<211> 516

<212> DNA

<213> Plasmodium falciparum

<220>

<221> CDS

<222> (1)..(516)

<400> 264

atg	gac	atc	gac	cct	tat	aaa	gaa	ttt	gga	gct	act	gtg	gag	tta	ctc	48
Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	
1				5					10					15		
tcg	ttt	ttg	cct	tct	gac	ttc	ttt	cct	tca	gta	cga	gat	ctt	cta	gat	96
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	
			20					25					30			
acc	gcc	tca	gct	ctg	tat	cgg	gaa	gcc	tta	gag	tct	cct	gag	cat	tgt	144
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	
		35				40						45				
tca	cct	cac	cat	act	gca	ctc	agg	caa	gca	att	ctt	tgc	tgg	ggg	gaa	192
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	
	50					55					60					
cta	atg	act	cta	gct	acc	tgg	gtg	ggg	gtt	aat	ttg	gaa	gat	gga	att	240
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Gly	Ile	
65					70				75						80	
aac	gct	aat	ccg	aac	gct	aat	ccg	aac	gct	aat	ccg	aac	gct	aat	ccg	288
Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	
				85					90						95	

gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat	336
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn	
100 105 110	
atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc	384
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu	
115 120 125	
act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg	432
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val	
130 135 140	
tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta	480
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu	
145 150 155 160	
tca aca ctt ccg gag act act gtt gtt tgc tag taa	516
Ser Thr Leu Pro Glu Thr Thr Val Val Cys	
165 170	

<210> 265  
 <211> 170  
 <212> PRT  
 <213> Plasmodium falciparum

<400> 265	
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu	
1 5 10 15	
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp	
20 25 30	
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys	
35 40 45	
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu	
50 55 60	
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile	
65 70 75 80	
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro	
85 90 95	
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn	
100 105 110	
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu	
115 120 125	
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val	
130 135 140	
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu	
145 150 155 160	
Ser Thr Leu Pro Glu Thr Thr Val Val Cys	
165 170	

<210> 266  
 <211> 579  
 <212> DNA  
 <213> Plasmodium falciparum

<220>  
 <221> CDS  
 <222> (1) .. (579)

<400> 266  
atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48  
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
1 5 10 15

tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96  
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
20 25 30

acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144  
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
35 40 45

tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192  
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
50 55 60

cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att 240  
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile  
65 70 75 80

aac gct aat ccg aac gct aat ccg aac gct aat ccg aac gct aat ccg 288  
Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro Asn Ala Asn Pro  
85 90 95

gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat 336  
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn  
100 105 110

atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc 384  
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu  
115 120 125

act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg 432  
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val  
130 135 140

tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta 480  
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu  
145 150 155 160

tca aca ctt ccg gag act act gtt gtt gga att gaa tat ctg aac aaa 528  
Ser Thr Leu Pro Glu Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys  
165 170 175

atc cag aac tct ctg tcc acc gaa tgg tct ccg tgc tcc gtt acc tag 576  
Ile Gln Asn Ser Leu Ser Thr Glu Trp Ser Pro Cys Ser Val Thr  
180 185 190

taa 579

<210> 267  
<211> 191  
<212> PRT  
<213> Plasmodium falciparum

<400> 267  
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu

1				5				10					15				
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp		
			20					25					30				
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys		
		35					40					45					
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu		
	50				55						60						
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Gly	Ile		
	65				70					75					80		
Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro		
			85					90						95			
Glu	Leu	Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr	Val	Asn	Thr	Asn		
		100						105					110				
Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His	Ile	Ser	Cys	Leu		
	115					120						125					
Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val	Ser	Phe	Gly	Val		
	130				135						140						
Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn	Ala	Pro	Ile	Leu		
	145			150						155					160		
Ser	Thr	Leu	Pro	Glu	Thr	Thr	Val	Val	Gly	Ile	Glu	Tyr	Leu	Asn	Lys		
			165					170						175			
Ile	Gln	Asn	Ser	Leu	Ser	Thr	Glu	Trp	Ser	Pro	Cys	Ser	Val	Thr			
			180					185					190				

<210> 268

<211> 591

<212> DNA

<213> Plasmodium falciparum

<220>

<221> CDS

<222> (1)..(591)

<400> 268

atg	gac	atc	gac	cct	tat	aaa	gaa	ttt	gga	gct	act	gtg	gag	tta	ctc	48
Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu	
1				5				10					15			
tcg	ttt	ttg	cct	tct	gac	ttc	ttt	cct	tca	gta	cga	gat	ctt	cta	gat	96
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp	
		20						25					30			
acc	gcc	tca	gct	ctg	tat	cgg	gaa	gcc	tta	gag	tct	cct	gag	cat	tgt	144
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys	
		35				40					45					
tca	cct	cac	cat	act	gca	ctc	agg	caa	gca	att	ctt	tgc	tgg	ggg	gaa	192
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu	
	50				55					60						
cta	atg	act	cta	gct	acc	tgg	gtg	ggg	gtt	aat	ttg	gaa	gat	gga	att	240
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Gly	Ile	
	65				70					75					80	
aac	gcg	aat	ccg	aac	gtg	gat	ccg	aat	gcc	aac	cct	aac	gcc	aac	cca	288
Asn	Ala	Asn	Pro	Asn	Val	Asp	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro	
			85					90					95			
aat	gcg	aac	cca	gag	ctc	cca	gcg	tct	aga	gac	cta	gta	gtc	agt	tat	336

Asn	Ala	Asn	Pro	Glu	Leu	Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr		
			100					105					110				
gtc	aac	act	aat	atg	ggc	cta	aag	ttc	agg	caa	ctc	ttg	tgg	ttt	cac	384	
Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His		
		115					120					125					
att	tct	tgt	ctc	act	ttt	gga	aga	gaa	aca	ggt	ata	gag	tat	ttg	gtg	432	
Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val		
	130					135					140						
tct	ttc	gga	gtg	tgg	att	cgc	act	cct	cca	gct	tat	aga	cca	cca	aat	480	
Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn		
145					150					155					160		
gcc	cct	atc	cta	tca	aca	ctt	ccg	gag	act	act	ggt	ggt	gga	att	gaa	528	
Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	Glu	Thr	Thr	Val	Val	Gly	Ile	Glu		
				165					170					175			
tat	ctg	aac	aaa	atc	cag	aac	tct	ctg	tcc	acc	gaa	tgg	tct	ccg	tgc	576	
Tyr	Leu	Asn	Lys	Ile	Gln	Asn	Ser	Leu	Ser	Thr	Glu	Trp	Ser	Pro	Cys		
			180					185					190				
tcc	ggt	acc	tag	taa												591	
Ser	Val	Thr															
		195															

<210> 269

<211> 195

<212> PRT

<213> Plasmodium falciparum

<400> 269

Met	Asp	Ile	Asp	Pro	Tyr	Lys	Glu	Phe	Gly	Ala	Thr	Val	Glu	Leu	Leu		
1				5					10					15			
Ser	Phe	Leu	Pro	Ser	Asp	Phe	Phe	Pro	Ser	Val	Arg	Asp	Leu	Leu	Asp		
			20					25					30				
Thr	Ala	Ser	Ala	Leu	Tyr	Arg	Glu	Ala	Leu	Glu	Ser	Pro	Glu	His	Cys		
		35				40						45					
Ser	Pro	His	His	Thr	Ala	Leu	Arg	Gln	Ala	Ile	Leu	Cys	Trp	Gly	Glu		
	50					55					60						
Leu	Met	Thr	Leu	Ala	Thr	Trp	Val	Gly	Val	Asn	Leu	Glu	Asp	Gly	Ile		
65					70				75						80		
Asn	Ala	Asn	Pro	Asn	Val	Asp	Pro	Asn	Ala	Asn	Pro	Asn	Ala	Asn	Pro		
				85					90					95			
Asn	Ala	Asn	Pro	Glu	Leu	Pro	Ala	Ser	Arg	Asp	Leu	Val	Val	Ser	Tyr		
			100					105					110				
Val	Asn	Thr	Asn	Met	Gly	Leu	Lys	Phe	Arg	Gln	Leu	Leu	Trp	Phe	His		
		115					120					125					
Ile	Ser	Cys	Leu	Thr	Phe	Gly	Arg	Glu	Thr	Val	Ile	Glu	Tyr	Leu	Val		
	130					135					140						
Ser	Phe	Gly	Val	Trp	Ile	Arg	Thr	Pro	Pro	Ala	Tyr	Arg	Pro	Pro	Asn		
145					150					155					160		
Ala	Pro	Ile	Leu	Ser	Thr	Leu	Pro	Glu	Thr	Thr	Val	Val	Gly	Ile	Glu		
				165					170					175			
Tyr	Leu	Asn	Lys	Ile	Gln	Asn	Ser	Leu	Ser	Thr	Glu	Trp	Ser	Pro	Cys		
			180					185					190				
Ser	Val	Thr															
		195															

<210> 270  
 <211> 561  
 <212> DNA  
 <213> Human immunodeficiency virus type 1

<220>  
 <221> CDS  
 <222> (1)..(561)

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<400> 270
atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc      48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
   1               5               10               15

tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat      96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
               20               25               30

acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt      144
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
               35               40               45

tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa      192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
   50               55               60

cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att      240
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile
   65               70               75               80

caa tgg atg gaa tgg gat cgt gag atc aac aat tat acc agc ctg ata      288
Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser Leu Ile
               85               90               95

cat tct tta att gaa gag tcc cag aac caa cag gag aaa aat gaa caa      336
His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln
               100              105              110

gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat      384
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn
               115              120              125

atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc      432
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu
               130              135              140

act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg      480
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val
               145              150              155              160

tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta      528
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu
               165              170              175

tca aca ctt ccg gag act act gtt gtt tag taa      561
Ser Thr Leu Pro Glu Thr Thr Val Val
               180              185

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<210> 271  
 <211> 185  
 <212> PRT  
 <213> Human immunodeficiency virus type 1

<400> 271  
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
 1 5 10 15  
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
 20 25 30  
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
 35 40 45  
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
 50 55 60  
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile  
 65 70 75 80  
 Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser Leu Ile  
 85 90 95  
 His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln  
 100 105 110  
 Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn  
 115 120 125  
 Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu  
 130 135 140  
 Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val  
 145 150 155 160  
 Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu  
 165 170 175  
 Ser Thr Leu Pro Glu Thr Thr Val Val  
 180 185

<210> 272  
 <211> 564  
 <212> DNA  
 <213> Human immunodeficiency virus type 1

<220>  
 <221> CDS  
 <222> (1)..(564)

<400> 272  
 atg gac atc gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc 48  
 Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu  
 1 5 10 15  
 tcg ttt ttg cct tct gac ttc ttt cct tca gta cga gat ctt cta gat 96  
 Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp  
 20 25 30  
 acc gcc tca gct ctg tat cgg gaa gcc tta gag tct cct gag cat tgt 144  
 Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys  
 35 40 45  
 tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg ggg gaa 192  
 Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu  
 50 55 60  
 cta atg act cta gct acc tgg gtg ggt gtt aat ttg gaa gat gga att 240  
 Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile

65	70	75	80	
caa tgg atg gaa tgg gat cgt gag atc aac aat tat acc agc ctg ata				288
Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser Leu Ile	85	90	95	
cat tct tta att gaa gag tcc cag aac caa cag gag aaa aat gaa caa				336
His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln	100	105	110	
gag ctc cca gcg tct aga gac cta gta gtc agt tat gtc aac act aat				384
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn	115	120	125	
atg ggc cta aag ttc agg caa ctc ttg tgg ttt cac att tct tgt ctc				432
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu	130	135	140	
act ttt gga aga gaa aca gtt ata gag tat ttg gtg tct ttc gga gtg				480
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val	145	150	155	160
tgg att cgc act cct cca gct tat aga cca cca aat gcc cct atc cta				528
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu	165	170	175	
tca aca ctt ccg gag act act gtt gtt tgc tag taa				564
Ser Thr Leu Pro Glu Thr Thr Val Val Cys	180	185		

<210> 273

<211> 186

<212> PRT

<213> Human immunodeficiency virus type 1

<400> 273

Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu				
1 5 10 15				
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp				
20 25 30				
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys				
35 40 45				
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu				
50 55 60				
Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Gly Ile				
65 70 75 80				
Gln Trp Met Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser Leu Ile				
85 90 95				
His Ser Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln				
100 105 110				
Glu Leu Pro Ala Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn				
115 120 125				
Met Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu				
130 135 140				
Thr Phe Gly Arg Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val				
145 150 155 160				
Trp Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu				
165 170 175				
Ser Thr Leu Pro Glu Thr Thr Val Val Cys				
180 185				

<210> 274  
 <211> 651  
 <212> DNA  
 <213> *Spermophilus variegatus*

<400> 274  
 atgtatcttt ttcacctgtg ccttggtttt gcctgtgttc catgtcctac tgttcaagcc 60  
 tccaagctgt gccttggatg gctttgggac atggacatag atccctataa agaatttggg 120  
 tcttcttatac agttgttgaa ttttcttcct ttggactttt ttcttgatct caatgcattg 180  
 gtggacactg ctgctgctct ttatgaagaa gaattaacag gtagggagca ttgttctcct 240  
 catcatactg ctattagaca ggccttagtg tgttgggaag aattaactag attaattaca 300  
 tggatgagtg aaaatacaac agaagaagtt agaagaatta ttgttgatca tgtcaataat 360  
 acttgggggac ttaaagtaag acagacttta tgggtttcatt tatcatgtct tacttttgga 420  
 caacacacag ttcaagaatt tttggttagt tttggagtat ggattagaac tccagctcct 480  
 tatagaccac ctaatgcacc cattttatca actcttccgg aacatacagt ctaggagaga 540  
 agaggagggt caagagctgc taggtcccc cgaagacgca ctccctctcc tcgcaggaga 600  
 aggtctcaat caccgcgtcg cagacgctct caatctccag cttccaactg c 651

<210> 275  
 <211> 549  
 <212> DNA  
 <213> *Hepatitis B virus*

<400> 275  
 atggacatcg acccttataa agaatttggg gctactgtgg agttactctc gtttttgcct 60  
 tctgacttct ttccttcagt acgagatctt ctagataccg cctcagctct gtatcgaggaa 120  
 gccttagagt ctcttgagca ttgttcacct caccatactg cactcaggca agcaattctt 180  
 tgctgggggg aactaatgac tctagctacc tgggtgggtg ttaatttggg agatccagcg 240  
 tctagagacc tagtagtcag ttatgtcaac actaatatgg gcctaaagtt caggcaactc 300  
 ttgtggtttc acatttcttg tctcactttt ggaagagaaa cagttagaga gtatttgggtg 360  
 tctttcggag tgtggattcg cactcctcca gcttatagac caccaaagtc ccctatccta 420  
 tcaacacttc cggagactac tgttgtaga cgacgaggca ggtcccctag aagaagaact 480  
 ccctcgcttc gcagacgaag gtctcaatcg ccgcgtcgca gaagatctca atctcgggaa 540  
 tctcaatgt 549

<210> 276  
 <211> 555  
 <212> DNA  
 <213> *Hepatitis B virus*

<400> 276  
 atggacattg acccttataa agaatttggg gctactgtgg agttactctc gtttttgcct 60  
 tctgacttct ttccttccgt acgagatctc ctagacaccg cctcagctct gtatcgagaa 120  
 gccttagagt ctcttgagca ttgttcacct caccatactg cactcaggca agccattctc 180  
 tgctgggggg aattgatgac tctagctacc tgggtgggta ataatttggc agatccagca 240  
 tccagagatc tagtagtcaa ttatgttaat actaacatgg gtttaaagat caggcaacta 300  
 ttgtggtttc atatatcttg ccttactttt ggaagagaga ctgtacttga atatttgggtc 360  
 tctttcggag tgtggattcg cactcctcca gcttatagac caccaaagtc ccctatccta 420  
 tcaacacttc cggaaactac tgttgtaga cgacgggacc gaggcaggtc ccctagaaga 480  
 agaactccct cgcctcgag acgcagatct caatcgccgc gtcgcagaag atctcaatct 540  
 cgggaatctc aatgt 555

<210> 277  
 <211> 555  
 <212> DNA

<213> Hepatitis B virus

<400> 277

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atggacattg acccttataa agaatttggg gctactgtgg agttactctc gtttttgcct 60
tctgacttct ttccttccgt cagagatctc ctagacaccg cctcagctct gtatcgagaa 120
gccttagagt ctcttgagca ttgctcacct caccatactg cactcaggca agccattctc 180
tgctgggggg aattgatgac tctagctacc tgggtgggta ataatttggg agatccagca 240
tctagggatc ttgtagttaa ttatgttaat actaacgtgg gtttaaagat caggcaacta 300
ttgtggtttc atatatcttg ccttactttt ggaagagaga ctgtacttga atatttggtc 360
tctttcggag tgtggattcg cactcctcca gcctatagac caccaaagtc ccctatctta 420
tcaacacttc cggaaactac tgttgtaga cgacgggacc gaggcaggtc ccctagaaga 480
agaactccct cgctcgag acgcagatct ccatcgccgc gtcgcagaag atctcaatct 540
cggaatctc aatgt 555
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<210> 278

<211> 549

<212> DNA

<213> Hepatitis B virus

<400> 278

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atggacattg acccttataa agaatttggg gctactgtgg agttactctc gtttttgcct 60
tctgacttct ttccttccgt acgagatctt ctagataccg ccgcagctct gtatcgggat 120
gccttagagt ctcttgagca ttgttcacct caccatactg cactcaggca agcaattctt 180
tgctggggag acttaatgac tctagctacc tgggtgggta ctaattttaga agatccagca 240
tctagggacc tagtagtcag ttatgtcaac actaatgtgg gcctaaagtt cagacaatta 300
ttgtggtttc acatttcttg tctcactttt ggaagagaaa cggttctaga gtatttggtg 360
tcttttggag tgtggattcg cactcctcca gcttatagac caccaaagtc ccctatctta 420
tcaacgcttc cggagactac tgttgtaga cgacgaggc ggtcccctag aagaagaact 480
ccctcgcttc gcagacgaag atctcaatcg ccgcgtcgca gaagatctca atctcgggaa 540
tctcaatgt 549
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<210> 279

<211> 549

<212> DNA

<213> Marmota monax

<400> 279

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atggcttttg ggcattggaca tagatcctta taaagaattt gggtcatctt atcagttggt 60
gaattttctt cctttggact tctttcctga tcttaatgct ttgggtggaca ctgctactgc 120
cttgatgaa gaagaactaa caggtaggga acattgctct ccgcaccata cagctattag 180
acaagcttta gtatgctggg atgaattaac taaattgata gcttgatga gctctaact 240
aacttctgaa caagtaagaa caatcattgt aaatcatgtc aatgatacct ggggacttaa 300
ggtgagacaa agtttatggt ttcatttgtc atgtctcact ttcggacaac atacagttca 360
agaattttta gtaagttttg gagtatggat caggactcca gctccatata gacctcctaa 420
tgcacccatt ctctcgactc ttccggaaca tacagtcatt aggagaagag gaggtgcaag 480
agcttctagg tccccagaa gacgcactcc ctctcctcgc aggagaagat ctcaatcacc 540
gcgtcgcag 549
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<210> 280

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: human  
cytochrome P450

<400> 280

Gln Glu Lys Gln Leu Asp Glu Asn Ala Asn Val Gln Leu  
 1 5 10

<210> 281  
 <211> 7  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: modified  
 portion of Hepatitis B core

<400> 281  
 Cys Val Val Thr Thr Glu Pro  
 1 5

<210> 282  
 <211> 42  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: modified  
 portion of Hepatitis B core

<400> 282  
 gcaagcttac tattgaattc cgcaaacaac agtagtctcc gg 42

<210> 283  
 <211> 26  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: modified  
 portion of Hepatitis B core

<400> 283  
 Thr Thr Val Val Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser Leu  
 1 5 10 15

Ser Thr Glu Trp Ser Pro Cys Ser Val Thr  
 20 25

<210> 284  
 <211> 27  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: modified  
 portion of Hepatitis B core

<400> 284  
 Thr Thr Val Val Cys Gly Ile Glu Tyr Leu Asn Lys Ile Gln Asn Ser  
 1 5 10 15

Leu Ser Thr Glu Trp Ser Pro Ala Ser Val Thr  
 20 25

<210> 285  
 <211> 51  
 <212> DNA  
 <213> plasmid pKK223

<400> 285  
 ttcacacagg aaacagaatt cccgggggatc cgtcgacctg cagccaagct t 51

<210> 286  
 <211> 38  
 <212> DNA  
 <213> plasmid pKK223

<400> 286  
 ttcacataag gaggaaaaaa cattgggatc cgaagctt 38

<210> 287  
 <211> 20  
 <212> PRT  
 <213> Plasmodium yoelii

<400> 287  
 Glu Phe Val Lys Gln Ile Ser Ser Gln Leu Thr Glu Glu Trp Ser Gln  
 1 5 10 15

Cys Ser Val Thr  
 20

<210> 288  
 <211> 14  
 <212> PRT  
 <213> Escherichia coli

<400> 288  
 Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly Cys Asn  
 1 5 10

<210> 289  
 <211> 18  
 <212> PRT  
 <213> Escherichia coli

<400> 289  
 Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly  
 1 5 10 15

Cys Asn

<210> 290  
 <211> 18  
 <212> PRT

<213> Escherichia coli

<400> 290

Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly  
1 5 10 15

Cys Asn

<210> 291

<211> 10

<212> PRT

<213> Influenza virus

<400> 291

Leu Ile Asp Ala Leu Leu Gly Asp Pro Cys  
1 5 10

<210> 292

<211> 9

<212> PRT

<213> Influenza virus

<400> 292

Thr Leu Ile Asp Ala Leu Leu Gly Cys  
1 5

<210> 293

<211> 42

<212> PRT

<213> Homo sapiens

<400> 293

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys  
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile  
20 25 30

Gly Leu Met Val Gly Gly Val Val Ile Ala  
35 40

<210> 294

<211> 11

<212> PRT

<213> Homo sapiens

<400> 294

Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile  
1 5 10

<210> 295

<211> 33

<212> PRT

<213> Homo sapiens

<400> 295  
 Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys  
           1                          5                          10                          15  
 Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile  
                           20                          25                          30

Gly

<210> 296  
 <211> 60  
 <212> DNA  
 <213> Homo sapiens

<400> 296  
 aattgatgcg gaatttcgtc atgacagcgg ctatgaggtg caccatcaga aactggagct 60

<210> 297  
 <211> 52  
 <212> DNA  
 <213> Homo sapiens

<400> 297  
 ccagtttctg atggtgcacc tcatagccgc tgtcatgacg aaattccgca tc 52

<210> 298  
 <211> 42  
 <212> DNA  
 <213> Homo sapiens

<400> 298  
 aattgaagat gtcggttcta acaagggggc aattatcgag ct 42

<210> 299  
 <211> 34  
 <212> DNA  
 <213> Homo sapiens

<400> 299  
 cgataattgc ccccttgta gaaccgacat cttc 34

<210> 300  
 <211> 82  
 <212> DNA  
 <213> Homo sapiens

<400> 300  
 gcgggaattg atgcggaatt tcgtcatgac agcggctatg aggtgcacca tcagaaactg 60  
 gttttctttg ccgaagatgt cg 82

<210> 301  
 <211> 83  
 <212> DNA  
 <213> Homo sapiens



<400> 301  
 gcggagctcc gctatgacaa cccacccac cattaagccg ataattgcc ccttggttaga 60  
 accgacatct tcggcaaaga aaa 83

<210> 302  
 <211> 53  
 <212> DNA  
 <213> Homo sapiens

<400> 302  
 gcggagctcg ataattgcc ccttggttaga accgacatct tcggcaaaga aaa 53

<210> 303  
 <211> 31  
 <212> DNA  
 <213> Homo sapiens

<400> 303  
 gcgggaattc tggatgcgga atttcgtcat g 31

<210> 304  
 <211> 17  
 <212> DNA  
 <213> Homo sapiens

<400> 304  
 gcggagctcc gctatga 17

<210> 305  
 <211> 31  
 <212> DNA  
 <213> Homo sapiens

<400> 305  
 gcgggaattc tggatgcgga atttcgtcat g 31

<210> 306  
 <211> 18  
 <212> DNA  
 <213> Homo sapiens

<400> 306  
 gcggagctcg ataattgc 18

<210> 307  
 <211> 24  
 <212> PRT  
 <213> Haemophilus influenzae

<400> 307  
 Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly  
 1 5 10 15

Cys Arg Cys Asn Asp Ser Ser Asp

<210> 308  
 <211> 23  
 <212> PRT  
 <213> Haemophilus influenzae

<400> 308  
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys  
   1                  5                  10                  15  
 Arg Cys Asn Asp Ser Ser Asp  
                   20

<210> 309  
 <211> 23  
 <212> PRT  
 <213> Haemophilus influenzae

<400> 309  
 Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala  
   1                  5                  10                  15  
 Arg Ala Asn Asp Ser Ser Asp  
                   20

<210> 310  
 <211> 35  
 <212> PRT  
 <213> Haemophilus influenzae

<400> 310  
 Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu  
   1                  5                  10                  15  
 Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu  
                   20                  25                  30  
 Trp Gly Ile  
           35

<210> 311  
 <211> 35  
 <212> PRT  
 <213> Haemophilus influenzae

<400> 311  
 Met Gly Ile Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu  
   1                  5                  10                  15  
 Trp Gly Cys Arg Cys Asn Asp Ser Ser Asp Glu Leu Leu Gly Trp Leu  
                   20                  25                  30  
 Trp Gly Ile  
           35

<210> 312  
<211> 23  
<212> PRT  
<213> Influenza A virus

<400> 312  
Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Ala  
1 5 10 15  
Arg Ala Asn Asp Ser Ser Asp  
20

<210> 313  
<211> 19  
<212> PRT  
<213> Influenza A virus

<400> 313  
Glu Gln Gln Ser Ala Val Asp Ala Asp Asp Ser His Phe Val Ser Ile  
1 5 10 15  
Glu Leu Glu